

[Document Name] Abstract

[Abstract]

[Object] To provide an apparatus for calculation of correlation that can take a correlation even when a frequency error is relatively large.

[Means for solution] With a 0-th degree correlator (110a) for taking, to output, a correlation between a reference signal and a measurement signal, an n-th degree correlator (110b-n) including an  $e^{j\omega t}$  multiplier (112b-n) for calculating a frequency component addition signal having a frequency component added to the reference signal, and a correlation calculator for taking, to output, a correlation between the frequency component addition signal and the measurement signal, and an adder (120) for adding an output of the 0-th degree correlator (110a) and an output of the n-th degree correlator (110b-n), it is achieved that the output of the 0-th degree correlator (110a) and the output of the n-th degree correlator (110b-n) added at the adder (120) do not have an increased noise/correlation value ratio, even when a frequency error is large. Accordingly, a correlation can be taken even with an increased frequency error.

[Selected drawing] Fig. 1